1.   (Amended)   A method of generating an impact matrix for use in allocating frequency channels in a wireless communication network service area, the network area divided into a plurality of sectors which are further divided into a plurality of pixels, the impact matrix providing impact scores which characterizes sector by sector channel interference in the network service area, the method comprising:

merging signal propagation analysis data and empirical measurement data to determine an anticipated signal level for each one of the plurality of pixels in the network service area;

determining which one of the sectors in the network service area is a serving sector for at least one of the pixels;

determining channel interference impact scores for the pixel based on the interference between the pixel's serving sector and each of the other sectors in the network service area; and

providing sector by sector channel interference impact scores.

2.   The method of claim 1, wherein merging propagation analysis is performed according to user ascribed confidences.

3.   (Amended)   The method of claim 1, wherein determining channel interference impact scores between the pixel's serving sector and signals from each of the other sectors in the network service area comprises:

calculating ratios between a signal from the serving sector and signal levels from each of the other sectors in the network service area;

assigning unweighted interference impact scores based in part on the calculated ratios; and

adjusting the unweighted interference impact scores according to user assigned variables.

4.   The method of claim 3, wherein the user assigned variables comprise network area sensitivity to call quality and amount of call volume for that network service area.

5.   (Amended)   The method of claim 1, further comprising modifying the channel interference impact scores in the impact matrix according to channel pairing relationships among sectors which are known to provide high levels or low levels of interference.

6.   (Amended)   The method of claim 5, further comprising modifying the channel interference impact scores in the impact matrix according to detailed call history information.

7.   The method of claim 6, wherein the detailed call history information includes dropped call information.

8.   (Amended)   A system for developing an impact matrix for use in frequency channel planning in a wireless communication network service area, the communication network service area divided into sectors and pixels, the system comprising:

        means for determining a signal strength level for each pixel in the network service area;

        means for determining which of the sectors is a serving sector for each pixel in the network service area;

        means for determining an interference impact score between each pixel's serving sector and each of the other non-serving sectors in the network service area; and

        means for determining overall sector by sector interference impact scores for inclusion in the impact matrix, the overall sector by sector interference impact scores based on the interference impact scores for the pixels within which a sector is the serving sector.

9.   The system of claim 8, wherein the means for determining a signal strength for each pixel in the network service area comprises means for conducting a propagation analysis and means for performing empirical measurements.

10.   (Amended)   The system of claim 8, wherein the means for determining an interference impact score between each pixel's serving sector and each of the other non-serving sectors in the network service area comprises:

        means for calculating for each of the other non-serving sectors in the network service area, a ratio between the signal strength level from the serving sector and a signal strength level from each of the other non-serving sectors;

        means for assigning interference impact scores for each of the non-serving sectors; and

        means for weighting the interference impact scores.

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11.   (Amended)   The system of claim 10, wherein the means for weighting the interference impact scores comprises means for allowing a user to specify sensitive areas within the communication network service area.

12.   (Amended)   The system of claim 11, wherein the means for weighting the interference impact scores comprises means for allowing the user to specify areas having high or low call volume within the communication network service area.

13.   The system of claim 8, further comprising means for modifying the impact matrix based on data which specifies co-channel assignments which will not result in excessive interference.

14.   The system of claim 13, further comprising means for modifying the impact matrix based on data which specifies co-channel assignments which will result in excessive interference.

15.   The system of claim 14, further comprising means for modifying the impact matrix based on data which specifies adjacent channel assignments which will not result in excessive interference.

16.   The system of claim 15, further comprising means for modifying the impact matrix based on data which specifies adjacent channel assignments which will result in excessive interference.

17.   The system of claim 16, further comprising means for modifying the impact matrix based on call detail information.

18.   (Amended)   The system of claim 17, wherein the call detail information includes at least one of the following: time of call drops, channel in use by dropped calls, serving sectors of dropped calls, time dropped calls began, initial channel assigned to dropped calls, initial serving sector of dropped calls, call handoff information and time calls ended.

19.   (Amended)   The system of claim 8, wherein the impact matrix allows a user to make and evaluate individual channel assignments in the communication network service area.

20.   (Amended)   A computer implemented process for creating an impact matrix for use in allocating channels in a wireless network which is divided into sectors, the impact matrix constructed based on a pixel by pixel analysis of signal interference within the network, the process comprising:

determining a serving sector for at least one pixel in the network;

determining weighted interference impact scores for the at least one pixel, the weighted interference impact scores based upon each of the non-serving sectors' interference impact upon the at least one pixel's serving sector; and

determining overall impact scores based upon the weighted interference impact scores for the at least one pixel.

21.   (Amended)   The process of claim 20, wherein determining a serving sector for the at least one pixel in the network comprises merging propagation analysis and empirical data according to user ascribed confidences.

22.   (Amended)   The process of claim 20, wherein determining overall impact scores comprises, for all of the pixels in the network for which a specific sector is the serving sector, processing all of the weighted interference impact scores for those pixels based upon the interference impact between the pixels' serving sector and each of the other non-serving sectors in the network.

23.   A method of using an impact matrix for frequency channel planning in a wireless communication network divided into sectors, the impact matrix providing sector by sector signal quality interference ratings, the method comprising:

determining an incremental quality degradation for a potential channel assignment in the network using the impact matrix; and

assigning frequency channels to sectors according to the incremental quality degradation provided by the impact matrix.

24.   The method of claim 23, wherein the impact matrix provides co-channel interference ratings.

25.   The method of claim 23, wherein the impact matrix provides adjacent channel interference ratings.

~~24~~ 26.   (Amended) A computer readable medium containing a program which when executed on a computer causes the computer to perform a method for creating an impact matrix for use in frequency channel planning in a network service area which is divided into a plurality of pixels, the method comprising:

determining a serving sector for each of the plurality of pixels in the network service area;

determining weighted interference impact scores for at least a selected one of the pixels, the weighted interference impact scores based upon each of the non-serving sectors' interference impact upon the selected pixel's serving sector; and

determining overall impact scores based upon the weighted interference impact scores, wherein the impact matrix characterizes the interference relationship between sectors in the network service area.

~~23~~ 27.   (New) The process of claim 20, wherein:

the weighted interference impact scores are determined in accordance with weighting factors which account for at least one of sensitivity to call quality and call volume.

28. (New) The computer readable medium of claim 24, wherein determining a serving sector for the at least one pixel in the network service area comprises merging propagation analysis and empirical data according to user ascribed confidences.

29. (New) The computer readable medium of claim 24, wherein determining overall impact scores comprises, for all of the pixels in the network service area for which a specific sector is the serving sector, processing all of the weighted interference impact scores for those pixels based upon the interference impact between the pixels' serving sector and each of the other non-serving sectors in the network service area.

30. (New) The computer readable medium of claim 24, wherein:

   the weighted interference impact scores are determined in accordance with weighting factors which account for at least one of sensitivity to call quality and call volume.

31. (New) A method for creating an impact matrix for use in allocating channels in a wireless network which is divided into sectors, the impact matrix constructed based on a pixel by pixel analysis of signal interference within the network, the method comprising:

   determining a serving sector for at least one pixel in the network;

   determining weighted interference impact scores for the at least one pixel, the weighted interference impact scores based upon each of the non-serving sectors' interference impact upon the pixel's serving sector; and

   determining overall impact scores based upon the weighted interference impact scores for the at least one pixel.

32. (New) The method of claim 31, wherein:

   determining a serving sector for the at least one pixel in the network comprises merging propagation analysis and empirical data according to user ascribed confidences.

30 33. (New) The method of claim 31, wherein:

determining overall impact scores comprises, for all of the pixels in the network for which a specific sector is the serving sector, processing all of the weighted interference impact scores for those pixels based upon the interference impact between the pixels' serving sector and each of the other non-serving sectors in the network.

31 34. (New) The method of claim 31, wherein:

the weighted interference impact scores are determined in accordance with weighting factors which account for at least one of sensitivity to call quality and call volume.

33 35. (New) A system for creating an impact matrix for use in allocating channels in a wireless network which is divided into sectors, the impact matrix constructed based on a pixel by pixel analysis of signal interference within the network, comprising:

means for determining a serving sector for at least one pixel in the network;

means for determining weighted interference impact scores for the at least one pixel, the weighted interference impact scores based upon each of the non-serving sectors' interference impact upon the pixel's serving sector; and

means for determining overall impact scores based upon the weighted interference impact scores for the at least one pixel.

33 36. (New) The system of claim 35, wherein:

the means for determining a serving sector for the at least one pixel in the network comprises merging propagation analysis and empirical data according to user ascribed confidences assigned to the data.

34 37. (New) The system of claim 35, wherein:

the means for determining overall impact scores comprises, for all of the pixels in the network for which a specific sector is the serving sector, processing all of the weighted interference impact scores for those pixels based upon the interference impact between the pixels' serving sector and each of the other non-serving sectors in the network.

35 38. (New) The system of claim 32, wherein:

the weighted interference impact scores are determined in accordance with weighting factors which account for at least one of sensitivity to call quality and call volume.

36 39. (New) A method of allocating frequency channels in a wireless communication network service area which is divided into a plurality of sectors which are further divided into a plurality of pixels, comprising:

determining respective anticipated signal levels for respective ones of the pixels by merging associated signal propagation analysis data and empirical measurement data;

for respective ones of the pixels, determining which of the sectors in the network service area is a serving sector therefor based on the respective anticipated signal level, and determining channel interference impact scores based on interference caused by other ones of the sectors in the network service area; and

generating data for use in an impact matrix based on the respective channel interference impact scores which characterizes sector by sector channel interference in the network service area;

wherein the impact matrix data is adapted for use in allocating the frequency channels in the network service area.

37 40. (New) A system for allocating frequency channels in a wireless communication network service area which is divided into a plurality of sectors which are further divided into a plurality of pixels, comprising:

means for determining respective anticipated signal levels for respective ones of the pixels by merging associated signal propagation analysis data and empirical measurement data;

means for determining, for respective ones of the pixels, which of the sectors in the network service area is a serving sector therefor based on the respective anticipated signal level, and for determining channel interference impact scores based on interference caused by other ones of the sectors in the network service area; and

means for generating data for use in an impact matrix based on the respective channel interference impact scores which characterizes sector by sector channel interference in the network service area;